

## REMARKS

### **I. Introduction**

With the addition of new claims 21 and 22, claims 10, 11, and 13 to 22 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

### **II. Rejection of Claims 10, 11, 13, 14, 17, 19, and 20** **Under 35 U.S.C. § 102(e) as Anticipated by Sakaguci et al.**

Claims 10, 11, 13, 14, 17, 19, and 20 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,633,466 ("Sakaguci et al."). It is respectfully submitted that Sakaguci et al. do not anticipate the present claims for at least the following reasons.

It is "well settled that the burden of establishing a prima facie case of anticipation resides with the [United States] Patent and Trademark Office." *Ex parte Skinner*, 2 U.S.P.Q.2d 1788, 1788 to 1789 (Bd. Pat. App. & Inter. 1986). To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claim 10 relates to a magnetoresistive layer system and recites a magnetoresistive layer stack that works substantially on the basis of one of a GMR effect and an AMR effect, and a layer array for generating a magnetic field which acts upon the magnetoresistive layer stack, where the layer array is situated at least one of (a) on and (b) below a magnetoresistive region of the magnetoresistive layer stack and includes at least one hard magnetic layer and at least one soft magnetic layer. As amended herein without prejudice, claim 10 recites that the **at least one soft magnetic layer is adjacent to the at least one hard magnetic layer**. Support for this amendment may be found, for example, at page 2, lines 1 to 7 of the Specification.

Claim 19 relates to a sensor element and recites a magnetoresistive layer system, in an environment of a magnetoresistive layer stack that works substantially on the basis of one of a GMR effect and an AMR effect, the magnetoresistive layer system including a layer array for generating a magnetic field which acts upon the magnetoresistive layer stack, the layer array situated at least one of (a) on and (b) below a magnetoresistive region of the magnetoresistive layer stack and including at least one hard magnetic layer and at least one soft magnetic layer. As amended herein without prejudice, claim 19 recites that **the at least one soft magnetic layer is adjacent to the at least one hard magnetic layer**. Support for this amendment may be found, for example, at page 2, lines 1 to 7 of the Specification.

Sakaguci et al. relate to a magnetoresistive thin film head. Sakaguci et al. disclose, referring to the Figures, hard magnetic layers 6, 23, 52, 81, 94, 106, 125, 134, 143 and soft magnetic layers 8, 21, 54, 83, 92, 104, 127, 136, 141 above GMR elements 5, 45. According to Sakaguci et al., the hard magnetic layers are in each instance separated by respective nonmagnetic layers 7, 22, 53, 82, 93, 105, 126, 135, 142, the thickness of which is chosen to ensure that the hard magnetic layers and the soft magnetic layers are antiferromagnetically coupled sufficiently. See, e.g., col. 10, lines 20 to 27. In this regard, Sakaguci et al. do not disclose, or even suggest, a layer array positioned on or below a magnetoresistive layer stack and having at least one hard magnetic layer and at least one soft magnetic layer, where the at least one soft magnetic layer is adjacent to the at least one hard magnetic layer.

It is noted that the Office Action appears to consider the free magnetic layer 44 of Sakaguci et al. to be a soft magnetic layer as recited in the present claims. See Office Action, page 2. Applicants respectfully disagree. Sakaguci et al. disclose GMR elements 5, 45 that include antiferromagnetic layers 1, 41, pinning layers 2, 42, nonmagnetic conductive layers 3, 43, and free magnetic layers 4, 44. Col. 4, lines 57 to 65 and col. 7, lines 55 to 67. Thus, Sakaguci et al. make clear that the **free magnetic layers 4, 44 are part of the GMR elements**. According to the present claims, the soft magnetic layer is part of a layer array, which acts upon and is situated at least one of on or below the magnetoresistive layer stack. As such, it is respectfully submitted that the free magnetic layers 4, 44 cannot constitute the at least one soft magnetic layer as recited in the present claims.

As indicated above, Sakaguci et al. do not, disclose, or even suggest, all of the features recited in any of claims 10 and 19. As such, it is respectfully submitted that Sakaguci et al. do not anticipate any of claims 10 and 19.

Claims 11, 13, 14, and 17 depend from claim 10 and therefore include all of the features recited in claim 10. As such, it is respectfully submitted that Sakaguci et al. do not anticipate these dependent claims for at least the same reasons set forth in support of claim 10.

Claim 20 depends from claim 19 and therefore includes all of the features recited in claim 19. As such, it is respectfully submitted that Sakaguci et al. do not anticipate claim 20 for at least the same reasons set forth in support of claim 19.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

**III. Rejection of Claims 10, 14, and 17 to 20  
Under 35 U.S.C. § 102(e) as Anticipated by Iwasaki et al.**

Claims 10, 14, and 17 to 20 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,690,553 ("Iwasaki et al."). It is respectfully submitted that Iwasaki et al. do not anticipate these claims for at least the following reasons.

Iwasaki et al. relate to a magnetoresistance effect device. Referring, for example, to Figure 2, Iwasaki et al. disclose a GMR film 14, a pair of hard magnetic films 20, electrodes 21, and a lower reproduction magnetic gap 13. In this regard, Iwasaki et al. do not disclose, or even suggest, a layer array positioned on or below a magnetoresistive layer stack and having at least one hard magnetic layer and at least one soft magnetic layer, where **the at least one soft magnetic layer is adjacent to the at least one hard magnetic layer**, as set forth in claims 10 and 19.

As indicated above Iwasaki et al. do not disclose, or even suggest, all of the features recited in any of claims 10 and 19. As such, it is respectfully submitted that Iwasaki et al. do not anticipate any of claims 10 and 19.

Claims 14, 17, and 18 depend from claim 10 and therefore include all of the features recited in claim 10. As such, it is respectfully submitted that Iwasaki et al. do not anticipate these dependent claims for at least the same reasons set forth in support of claim 10.

Claim 20 depends from claim 19 and therefore includes all of the features recited in claim 19. As such, it is respectfully submitted that Iwasaki et al. do not anticipate claim 20 for at least the same reasons set forth in support of claim 19.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

**IV. Rejection of Claims 15 and 16 Under 35 U.S.C. § 103(a)**

Claims 15 and 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over either Sakaguci et al. or Iwasaki et al. Neither Sakaguci et al. nor Iwasaki et al. render unpatentable the present claims for at least the following reasons.

Claims 15 and 16 ultimately depend from claim 10. As indicated above, neither Sakaguci et al. nor Iwasaki et al. disclose, or even suggest, all of the features recited in claim 10. Accordingly, it is respectfully submitted that neither Sakaguci et al. nor Iwasaki et al. render unpatentable any of claims 15 and 16. Accordingly, withdrawal of this rejection is respectfully requested.

**V. New Claims 21 and 22**

New claims 21 and 22 have been added. Support for these claims may be found, for example, at page 4, lines 18 to 22 of the Specification. No new matter has been added.

Since claim 21 depends from claim 10 and therefore includes all of the features of claim 10, it is respectfully submitted that claim 21 is patentable over the references relied upon for at least the same reasons set forth above in support of the patentability of claim 10.

Since claim 22 depends from claim 19 and therefore includes all of the features of claim 19, it is respectfully submitted that claim 22 is patentable over the references relied upon for at least the same reasons set forth above in support of the patentability of claim 19.


**VI. Conclusion**

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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